IN THE CLAIMS

1. (original) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

a first transmission unit provided on an input side of the first optical switch configured to transmit a first control message including a transmission port number of a transmission port for transmitting the first control message; and

a transmission port control unit configured to control the first optical switch so that the first control message is transmitted through different transmission ports sequentially.

2. (original) The optical transmission system as claimed in claim 1, wherein

the second optical transmission apparatus includes:

a first reception unit provided on an output side of the second optical switch configured to receive the first control message; and

a reception port control unit configured to control the second optical switch so that the first control message is received by the first reception unit through different reception ports sequentially.

3. (original) The optical transmission system as claimed in claim 1, wherein

the transmission port control unit controls the first optical switch so that the first control message is transmitted through different transmission ports sequentially and periodically.

4. (original) The optical transmission system as claimed in claim 2, wherein

after receiving the first control message, the first reception unit controls the reception port control unit so as to receive the first control message next time through a reception port having a reception port number next to a present reception port number.

5. (original) The optical transmission system as claimed in claim 2, wherein

the first optical transmission apparatus further comprises a second reception unit configured to receive a second control message including the transmission port number and a reception port number of the second optical transmission apparatus for receiving the first control message,

wherein

after the second reception unit receives the second control message, the first transmission unit transmits a control message as the first control message from a transmission port having a transmission port number next to the transmission port number included in the second control message, the next transmission port number being included in the control message transmitted by the first transmission unit as the first control message.

6. (original) The optical transmission system as claimed in claim 5, wherein

the second optical transmission apparatus further comprises a second transmission unit configured to transmit the second control message,

wherein

the reception port control unit controls the second optical switch so that the first control message is received through different reception ports sequentially and periodically.

7. (withdrawn from consideration) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission ap paratus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

an optical signal transmission unit provided on an input side of the first optical switch configured to transmit an optical signal;

a first transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the optical signal; and

a transmission port control unit configured to control the first optical switch so that the optical signal is transmitted through different transmission ports sequentially and periodically.

8. (withdrawn from consideration) The optical transmission system as claimed in claim 7, wherein

the second optical transmission apparatus includes:

an optical signal reception unit provided on an output side of the second optical switch configured to receive the optical signal; and

a reception port control unit configured to control the second optical switch so that the optical signal is received by the optical signal reception unit through different reception ports sequentially,

wherein

after receiving the optical signal, the optical signal reception unit controls the reception port control unit so as to receive the optical signal next time through a reception port having a reception port number next to a present reception port number.

9. (withdrawn from consideration) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

an optical signal transmission unit provided on an input side of the first optical switch configured to transmit an optical signal;

a transmission port control unit configured to control the first optical switch;

a first transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the optical signal; and

a first reception unit configured to receive a second control message including the transmission port number and a reception port number of a reception port of the second optical transmission apparatus for receiving the optical signal,

wherein

after the first reception unit receives the second control message, the transmission port control unit controls the first optical switch so that the optical signal is transmitted through a transmission port having a transmission port number next to the transmission port number included in the second control message.

10. (withdrawn from consideration) The optical transmission system as claimed in claim 9, wherein

the second optical transmission apparatus includes:

an optical signal reception unit provided on an output side of the second optical switch configured to receive the optical signal;

a reception port control unit configured to control the second optical switch so that the optical signal is received by the optical signal reception unit through different reception ports sequentially;

a second transmission unit configured to transmit the second control message; and

a second reception unit configured to receive the first control message,

wherein

the optical signal reception unit controls the reception port control unit so as to receive the optical signal through different reception ports sequentially and periodically.

11. (withdrawn from consideration) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

a test signal transmission unit provided on an output side of the first optical switch configured to transmit a test signal;

a transmission unit configured to transmit a control message including a transmission port number of a transmission port for transmitting the test signal,

wherein

the test signal transmission unit transmits the test signal through different transmission ports sequentially, separated by a predetermined time period.

12. (withdrawn from consideration) The optical transmission system as claimed in claim 11, wherein

the second optical transmission apparatus includes:

a test signal reception unit provided on an output side of the second optical switch configured to receive the test signal to monitor a reception state;

a reception unit configured to receive the control message.

13. (withdrawn from consideration) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

a test signal transmission unit provided on an output side of the first optical switch configured to transmit a test signal;

a first transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the test signal; and

a first reception unit configured to receive a second control message including the transmission port number and a r eception port number of a reception port of the second optical transmission apparatus for receiving the test signal,

wherein

after the first reception unit receives the second control message, the test signal transmission unit transmits the test signal through a transmission port having a transmission port number next to the transmission port number included in the second control message.

14. (withdrawn from consideration) The optical transmission system as claimed in claim 13, wherein

the second optical transmission apparatus includes:

a test signal reception unit provided on an output side of the second optical switch configured to receive the test signal to monitor a reception state;

a second transmission unit configured to transmit the second control message; and

a second reception unit configured to receive the first control message.

15. **(canceled)**

16. (original) The optic al transmission system as claimed in claim 2, further comprising

a control message reception waiting timer that starts to count the time when the first control message is received, and terminates after a predetermined time period,

wherein

when the control message reception waiting timer terminates, the reception port control unit controls the second optical switch so that the first control message is received through a different reception port.

17. (withdrawn from consideration) The optical transmission system as claimed in claim 7, wherein

the second optical transmission apparatus includes:

an optical signal reception unit provided on an output side of the second optical switch configured to receive the optical signal;

a reception port control unit configured to control the second optical switch so that the optical signal is received by the optical signal reception unit through different reception ports sequentially; and

a control message reception waiting timer that starts to count the time when the first control message is received, and terminates after a predetermined time period, wherein

when the control message reception waiting timer terminates, the reception port control unit controls the second optical switch so that the first control message is received through a different reception port.

18. (original) The optical transmission system as claimed in claim 1, wherein

the first optical transmission apparatus includes:

a first reception unit configured to receive a second control message including the transmission port number and a reception port number of a reception port of the second optical transmission apparatus for receiving the first control message; and

a control message reception waiting timer that starts to count the time when the second control message is received, and terminates after a predetermined time period,

wherein

when the control message reception waiting timer terminates, the transmission port control unit controls the first optical switch so that the first control message is transmitted through a next transmission port, the next transmission port number being included in said transmitted first control message.

19. (withdrawn from consideration) An optical transmission system including:

a first optical transmission apparatus having a first optical switch; and

a second optical transmission apparatus having a second optical switch,

said optical transmission system being capable of setting a connection relation between the first optical transmission apparatus and the second optical transmission apparatus,

wherein

the first optical transmission apparatus includes:

an optical signal transmission unit provided on an input side of the first optical switch configured to transmit an optical signal;

a transmission port control unit configured to control the first optical switch;

a first transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the optical signal;

a first reception unit configured to receive a second control message including the transmission port number and a reception port number of a reception port of the second optical transmission apparatus for receiving the optical signal; and

a control message reception waiting timer that starts to count the time when the second control message is received, and terminates after a predetermined time period,

wherein

when the control message reception waiting timer terminates, the transmission port control unit controls the first optical switch so that the first control message is transmitted from a next transmission port.

20. (original) The optical transmission system as claimed in claim 1, wherein

a link summary message including a connection relation between the first optical transmission apparatus and the second optical transmission apparatus is exchanged therebetween; and

transmission ports and reception ports not in agreement or not recognized in the connection relation between the first optical transmission apparatus and the second optical

transmission apparatus are used for searching for and setting the transmission port number and a reception port number.

21. (original) The optical transmission system as claimed in claim 1, wherein

when errors occur in transmission between the first optical transmission apparatus and the second optical transmission apparatus, transmission ports and reception ports related to the erroneous transmission are used for searching for and setting the transmission port number and a reception port number.

22. (original) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

a transmission unit provided on an input side of the optical switch configured to transmit a first control message including a transmission port number of a transmission port for transmitting the first control message; and

a transmission port control unit configured to control the optical switch so that the first control message is transmitted through different transmission ports sequentially.

23. (original) The optical transmission apparatus as claimed in claim 22, wherein the transmission port control unit controls the optical switch so that the first control message is transmitted through different transmission ports sequentially and periodically.

24. (original) The optical transmission apparatus as claimed in claim 22, further comprising

a reception unit configured to receive a second control message including the transmission port number and a reception port number of the opposite optical transmission apparatus for receiving the first control message,

wherein

after the reception unit receives the second control message, the transmission unit transmits a control message as the first control message from a transmission port having a transmission port number next to the transmission port number included in the second control message, the next transmission port number being included in the transmitted control message.

25. (original) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

a reception unit provided on an output side of the optical switch configured to receive a control message; and

a reception port control unit configured to control the optical switch so that the control message is received through different reception ports sequentially.

26. (original) The optical transmission apparatus as claimed in claim 25, wherein after receiving the control message, the reception unit controls the reception port control unit so as to receive the control message next time through a reception port having a reception port number next to a present reception port number.

27. (original) The optical transmission apparatus as claimed in claim 26, wherein

the reception port control unit controls the optical switch so that the control message is received through different reception ports sequentially and periodically.

28. (withdrawn from consideration) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

an optical signal transmission unit provided on an input side of the optical switch configured to transmit an optical signal;

a transmission unit configured to transmit a control message; and

a transmission port control unit configured to control the optical switch so that the optical signal is transmitted through different transmission ports sequentially and periodically.

29. (withdrawn from consideration) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

an optical signal transmission unit provided on an input side of the optical switch configured to transmit an optical signal;

a transmission port control unit configured to control the optical switch;

a transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the optical signal; and

a reception unit configured to receive a second control message including the transmission port number and a reception port number of a reception port of the opposite optical transmission apparatus for receiving the optical signal,

wherein

after the reception unit receives the second control message, the transmission port control unit controls the optical switch so that the optical signal is transmitted through a transmission port having a transmission port number next to the transmission port number included in the second control message.

30. (withdrawn from consideration) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

a test signal transmission unit provided on an output side of the optical switch configured to transmit a test signal;

a transmission unit configured to transmit a control message including a transmission port number of a transmission port for transmitting the test signal,

wherein

the test signal transmission unit transmits the test signal through different transmission ports sequentially, separated by a predetermined time period.

31. (withdrawn from consideration) An optical transmission apparatus having an optical switch capable of setting a connection relation with another optical transmission apparatus opposite thereto, including:

a test signal transmission unit provided on an output side of the optical switch configured to transmit a test signal;

a transmission unit configured to transmit a first control message including a transmission port number of a transmission port for transmitting the test signal; and

a reception unit configured to receive a second control message including the transmission port number and a reception port number of a reception port of the opposite optical transmission apparatus for receiving the test signal,

wherein

after the reception unit receives the second control message, the test signal transmission unit transmits the test signal through a transmission port having a transmission port number next to the transmission port number included in the second control message.

32. – 35. **(canceled)**